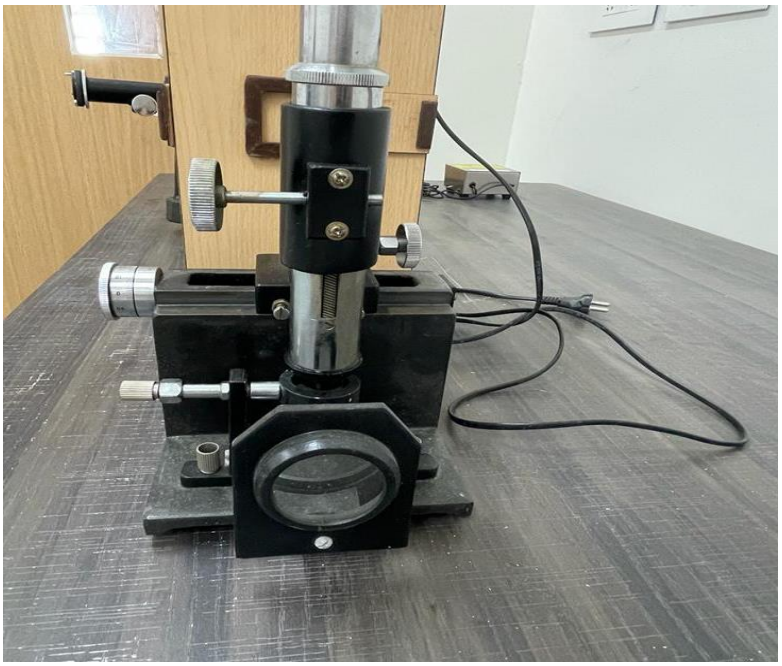
Newton's Ring apparatus



Basic Details: -

- Newton's ring apparatus- A standard microscope unit having 30 × magnifications is provided with ratable line and eye piece.
- Whole microscope tube unit can be raised or lowered and clamped at desired position. Focusing of microscope is done by rack and pinion arrangement.
- Longitudinal movement of microscope saddle for the purpose of ring is done by rotating the drum provided.
- 26mm movement can be read by scale and on the divided drum to 0.001cm.

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Spectrometer for Diffraction Grating experiments

Basic Details: -

- SPECTROMETER STANDARD- 6” dia circle reading 30secs.
- The objectives used in telescope and collimator are achromatic and provided with rack and pinion focusing arrangement.
- Telescope arm and prism table are provided with fine and coarse adjustment. The prism table is provided with three levelling screws and is engraved with concentric rings and lines.

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Hall effect

Basic Details: -

- **Hall probe (Ge crystal)**
  Material- Ge single crystal n or p type
  Resistivity-8-10Ωcm
  Contacts-spring type
  Zero field potential- <1mV
  Hall voltage- 25-35mV/10mA/KG
- **Hall probe (InAs crystal)**
  Contacts-soldered
  Rated control current- 4mA
  Zero field potential- <4mV
  Hall voltage- 60-70mV/4mA/KG
  Linearity- ±0.5% or better
- **Digital millivoltmeter**
  Range-0-200mV
  Accuracy- ±0.1% of reading
- **Constant current power supply**
  Current-0-20mA
  Resolution- 10μA
  Accuracy- ± 0.2%
  Load regulation-0.03%
  Line regulation- 0.05%
- **Electromagnet**
- **Digital gauss meter**

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Dielectric constant kit

Basic Details: -

- Dielectric constant kit
- Electrometer amplifier
- Digital multimeter
- Power supply
- High voltage power supply
- Flexible plug leads (50cm), black
- Flexible plug leads (50cm), red
- Earthing lead (100 cm), green
- 2way switch
- Capacitor module 0.01µF
- Capacitor module 100nF
- 4.7MΩ resistance box
- Flexible plug leads (25cm), black
- Flexible plug leads (25cm), red Flexible plug leads (50cm), yellow Flexible plug leads (100cm), black & red

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Laser experiment with Optical

Basic Details: -

- Optical bench- dimensions (mm) L1000×W50×H50.
- Two Fixed stand.
- One Sliding stand.
- Laser source- wavelength-630nm, output- less than 3Mw, battery-1.5V.
- Diffraction grating- 15000L/inch
- Single slit.
- Viewing Screen with scale.
- Grating holder, Screen holder, Laser holding rod.

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Diode V-I characteristics

Basic Details: -

- Silicon diode, Zener diode and LED
- Inbuilt Ammeter
- Inbuilt voltmeter

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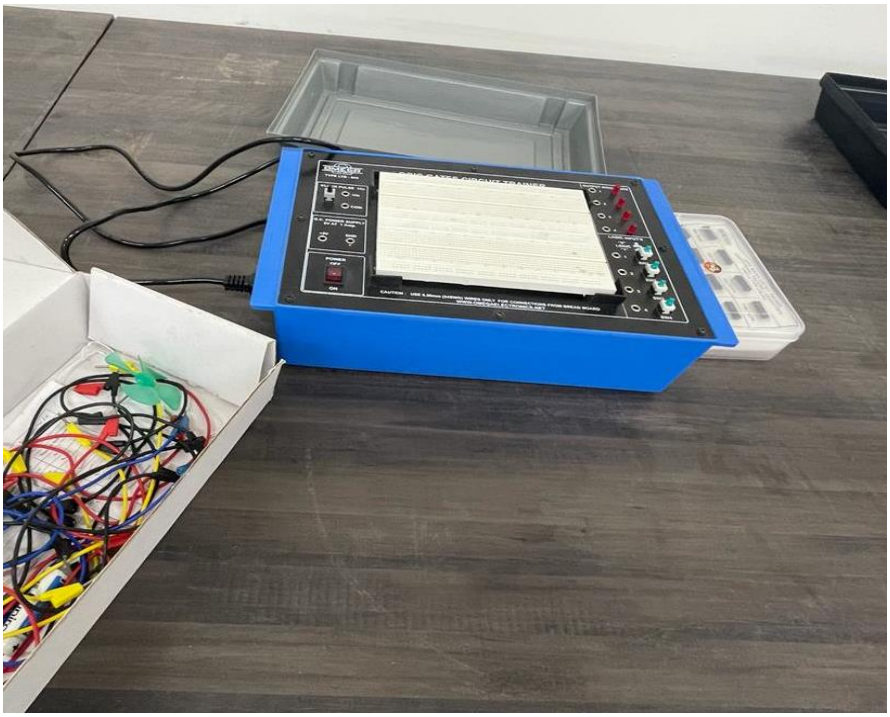
Logic Gate kit



Basic Details: -

- Output DC voltage: fixed 5V±1%
- Output current: 1Ampere
- Load regulation (No load to full load): ±1% of the highest specified voltage
- Line regulation (for ± 10 %change in mains voltage i.e. 230V): less than 5mV
- Ripple and noise: less than 5mV
- Clock pulse: clock pulse of 1second
- Input logic switch
- Output indicators
- Solderless bread board
- Basic logic gates & flip flop units

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Solar panel and its application

Basic Details: -

- Solar panel
- Voltmeter
- Ammeter
- Potentiometer
- 2AA rechargeable NiCd battery
- Bulb
- Fan
- FM band radio
- Dimensions: W365×D265×H120

Four Probe method

Basic Details: -

- Multi range digital voltmeter
- Constant current generator
- Oven power supply

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Optical fibre Kit

Basic Details: -

- Transmitter
- Receiver
- Modulation techniques
- Drivers
- Clock
- PLL detector
- AC amplifiers
- Comparators
- Filter
- Function generator
- Voice link
- Switched faults
- Fibre optic cable
- Numerical apertures measurement jig and mandrel for bending loss measurement
- Microphone
- Headphone
- Set of patch codes

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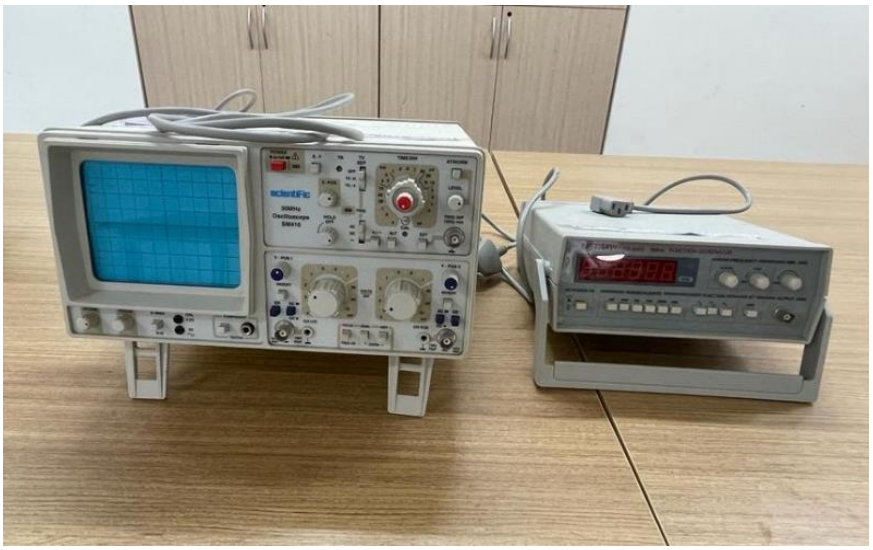
Cathode Ray Oscilloscope and



Basic Details: -

- **CRO:**
  Operating modes
  Bandwidth: DC-30 MHz9-3dB)
  Rise time: 12ns approx.
  Deflection coefficients: microcontroller based 12 calibrated
  Steps 5mV/div – 20V/div` electronic control. Display on colour LCD
  Accuracy: ±3%
  Input impedance: 1MΩ || 30pF
  approx.
  Input: BNC connectors
  Input coupling: DC-AC-GND
  Time coefficients: microcontroller based 18 calibrated steps
  Accuracy: ± 3%
  Magnifier: × 10
- **Function generator**
  Function generator-5000M
  Frequency range- 0.5Hz -5MHz
  Amplitude- ≥ 10Vpp
  Impedance- 50Ω±10%
  Attenuator- -20dB±1dB
  DC offset- <~5V~>5V
  Duty control- 80%:20%:80% to 1MHzcontinued variable
  Display: 6 digits LED display
  Sine wave
  Triangular wave,Square wave

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Ultrasonic waves training kit

Basic Details: -

- Quartz crystal:

  Diameter- 20/14mm.

  Thickness-1.4mm

  Frequency-2MHz.
- Display- LCD
- Liquid cell:

  Optimum quantity of liquid-12cm^3
  Max. Displacement- 25mm of the Reflector
  Least count of micrometre- 0.01mm

- Mains cord' Co-axial cable.

- Distance measurement:
  Ultrasonic transducer- 28cm to 1.0m approx.
  Clock generator- 40 KHz.
  Amplifier-60db

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Lloyd's Mirror

Basic Details:

- Optical bench- two 150cm long steel rod $\frac{3}{4}$ dia forming a bench with end supports having levelling screws. One of the two steel rods is graduated in cm and mm. it has four riders, two with transverse motion.
- Lloyd's mirror mounted
- Lens holder--spring action type having well-grounded stainless-steel jaws.
- Micrometre eye piece- a Ramsdens 10× eye piece carried on a slide which moves along micrometre screw. The movement is read on 30-0-30mm steel scale and directly on micrometre head to 0.001cm no backlash.
- Optical slit- optically true, precision ground stainless steel jaws. The jaws open uniformly all along the milled head.
- Double convex lens- 50mm diameter and F.L. 10cm.
- Sodium light source- sodium light source completes with sodium lamp 35 Watt with vacuum jacket, transformer and wooden box having four holes with slide covers one each on every side at different heights.

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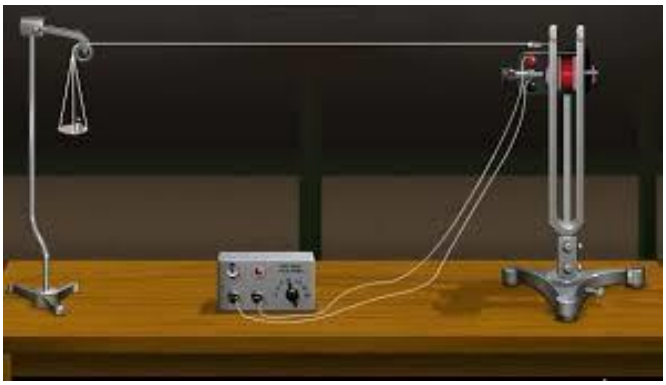
Laser Diodes

Basic Details:

Green laser 540 nm with power supply,

Red He-Ne laser: 1-2 mw power, 633 nm, randomly polarised beam, reflectivity at high end 99.99%

Melde's experiment.



Basic Details:

- Clamps
- Pulleys
- Weights- 10gm, 20gm, 20gm, 50gm, 100gm.
- Tuning fork
- Hammer.

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Sonometer

Basic Details:

- Sonometer- one meter long made of soft wood and well-polished. Fitted with two-meter scale graduated in centimetres. It is provided with wire of two different materials steel and brass, sliding knife edges and hook.
- Tuning fork- set of eight, small size made of steel, nickel plated. Frequency is marked on the tuning fork. The frequencies are 256, 288, 320, 341.3, 384, 426.6, 480 and 512Hz.
- Rubber pad for tuning fork.
- Step down transformer (0-12V, 2V/step) at 2 Ampere.
- Electromagnet.
- Horse shoe magnet (U magnet).
- Screw gauge.
- Retord stand with clamp.
- Slotted weights- $\frac{1}{2}$ kg set of 5 including hanger i.e. $2\frac{1}{2}$ kg total.

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Spectrometers for Prism and Fabry-Perot experiments

Basic Details: -

- Prism- optically worked with two faces polished, equilateral size 38mm× 38mm.
- Fabry Perot Etalon
- Spectrometer standard
- Sodium light source
- Mercury light source- complete with mercury vapour lamp 80W along with choke and wooden box with holes with slide covers one each on three sides.
- Reading lens- 40/50mm diameter with handle.
- Spirit level- 60/80mm length.